growth are unaffected and, after decomposition of milk has proceeded past a certain point, no amount of sterilization will make that milk wholesome. This point needs especially to be impressed upon the nurse or the mother of the child.

A moot point is the diluent to be used. Shall we use water, gruel of various cereals, or prepared infant foods? The casein of cows' milk is so different from human casein that none but the more robust infant can digest it undiluted or unchanged.

Can the necessary, or the nearest approach to the necessary, modification be attained by simple dilution, or can it best be done by the aid of suspended starch? Rotch is uncompromisingly in favor of the use of water, asserting that the alleged mechanical separation of curds by starch particles is a fallacy. There seems to be good reason for this opinion, and taking into consideration the ill effects of starch likely to be produced in the intestinal tract, starchy diluents had in general better be rejected.

The prepared foods hardly need consideration. They play the same role in infant feeding that is filled in drug therapy by the ready-made prescription: That is, they are used by the indolent or careless physician who finds the preparation of a milk mixture or extemporaneous prescribing too much of a tax on his time and his brain.

Dilution with whey, on the other hand, has much to recommend it. Whey is procurable without great trouble, need be no more a carrier of infection than the milk from which it is obtained, and the whey proteids are more like the proteids of human milk than those of whole milk.

In the struggle for a sterile milk with a not too large proportion of assimilable proteids, another factor is frequently forgotten: That is, the fat content. Some infants will not tolerate the usual fat proportion, whereas, with the fat almost entirely removed, they flourish.

The relative acidity of milk depends largely on the amount of bacterial growth therein, hence the more carefully the milk is handled, the less will be the necessity for addition of lime water, which is probably the most advantageous form in which to add alkali.

So no constant amount of lime water for addition can be stated.

Condensed milk demands more than a word. The widespread use of this preparation, the ease with which it can be prepared, and the apparently happy results make it difficult of attack.

There is no doubt that occasionally a child who has rejected every milk mixture and every food previously, will suddenly improve when put upon condensed milk, and the improvement may be lasting. But, there is likewise no doubt that the resisting power of condensed milk-fed infants is low, the fat is flabby, and the predisposition to rickets and scurvy is increased many fold. Condensed milk must not be used. The excuses for its use, ease of preparation and cheapness, are worse than none.

In fine, our dependence must be on cows' milk, sterile as nearly as may be, diluted, sweetened, salted, and enriched with added cream.

We must be assured of a clean milk from the dairy, and the manipulation of this milk after reception into the home must be such that it is offered to the child as nearly sterile as care can make it. Herein lies the success of the home modification of milk.

PROSTATIC OBSTRUCTIONS AND THEIR REMOVAL.*

By GRANVILLE MacGOWAN, M. D.

Professor of Diseases of Skin and Genito-Urinary Organs, College of Medicine, University of Southern California.

ORATION ON SURGERY.

(*Continued from page 208.*)

I wish to emphasize that it frequently is not the largest or most prominent tumors, those which are the easiest felt by the finger, that form impediment to urination. It sometimes happens that large tumors easily shelled out are removed from both sides of the urethra and a few small nodules situated directly beneath the mucous membrane of the bladder neck are left, because they are not deemed of importance or because they are not easily enucleated, and afterward it is found that the patient cannot empty the bladder, or can do so only very imperfectly, because the real obstruction was not taken away. In order to obtain a perfect and lasting result, all tumors should be removed, for any which are left may readily grow and become larger. This is very well exemplified in some bladders which are in my possession, where nodules which at the time were deemed too small to bother with subsequently grew to proportions which could ultimately have caused obstruction.

PERILS AND ACCIDENTS OF THE OPERATION AND UNSATISFACTORY RESULTS SOMETIMES FOLLOWING IT.

When one who has had no experience in these operations reads statements reporting a long list of cases operated without deaths and all perfectly cured, which, of course, I take to mean the ability to empty the bladder entirely and with convenience, it would seem that the procedure is always easy of execution, that there are no dangers, and there need never be any anxiety about the outcome as to life, and the ultimate perfect restoration of the power of voluntary urination. Do not be deceived by such reports. Some people die in the hands of every operator, and misrepresentation with regard to the dangers, dif-

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ficulties, and annoyances will not help to popularize these operations with the medical profession.

In the suprapubic operation, one has to deal always with the possible dangers of urinary infiltration, and, at times, with profuse hemorrhages. Where there is great removal of tissue, it may be followed by the formation of very irregular cicatrices about the base of the bladder, with sometimes such deformity of the bladder neck that continuous leakage occurs, necessitating the use of a rubber urinal. Where the tumors removed are fibroid, or are dense and adherent it is necessary to bite them off piece by piece by rongeurs or serrated scissors. The pressure of the knuckles of the hand used for enucleation or of the handles of the rongeurs often destroys the vitality of the fatty tissues of the abdomen about the cut, or the cellular tissue in front of the bladder, or sometimes the bladder wall itself, producing necrosis and subsequently sloughing, and the wound is slow to heal or sometimes leaves a fistula, which requires one or more subsequent plastic operations to close.

The leakage from a suprapubic wound is always very disagreeable and annoying to the patient. Even after the voluntary power of urination is restored the fistula may remain open for days or for weeks, and occasionally a portion of the urine will escape from it when the bladder is distended. I have seen men much more troubled about this, and much more miserable over it, than they were when they could not urinate at all, and were suffering intensely every minute of the day from obstruction.

The difficulties of the perineal operation are not usually great. Its perils consist in:

(1) The making of an irregular tear in the bulbous urethra by the assistant who holds the staff thrusting it awkwardly and violently through the bulb. This gives rise to very prolonged healing of the urethral wound, and sometimes to the formation of a fistula difficult to repair.

(2) When the prostatic capsule is entered and an attempt made to enucleate its contents, no line of cleavage can be found and persistence in an effort to excochleate may lead to a tearing away of the organ from the pelvic tissues making room for urinary infiltration and subsequent infection.

(3) If such fibroid growths are removed piecemeal with scissors and rongeur, it leaves a very irregular channel, which subsequently tends to contract, making resistance to the entrance of any instrument, and interfering in part, or in whole, with the expulsion of the urine, so that the individual is no better off than before. In one case a Bottini had subsequently to be done before the power of urination was restored.

Los Angeles, March 13, 1903. I. C. S., 68, farmer. Patient of Dr. Beckett; has led catheter life for three years, and had frequency with difficulty in urinating for a year previous. Urethra passable frequently only to a stiff catheter loaded with a mandrin. Frequency about ninety minutes.

Operation—Perineal prostatectomy. It was believed that the prostate would excochleate readily, but it was so irregular and dense intra-urethrally that it was suspected to be cancerous; no line of cleavage could be found. Attempts to enucleate on either side resulted in opening the tissues of the pelvis outside of the capsule. Being without the Bottini, a suprapubic incision was made, and as much of the rubber ball-like substance removed by rongeurs as was necessary to provide a channel sufficient to admit two fingers. Drained both ways by metallic perineal tube and DePezzer's suprapubic. Tubes removed on fourth day. Perineal wound healed on eighth day. Suprapubic wound closed on the eighteenth day, but no urine passing it was reopened and a small DePezzer tube reinserted. On April 2d a Bottini was done under Nervanin; cocaine anesthesia. Three incisions, each three centimeters long, were made on the floor and each side of the commencement of the urethra.

April 17th: Voluntary urination; good full stream, which empties the viscus. Much slough has passed away in the bladder washings.

Cure practically finished April 18th; suprapubic tube removed April 20th. All urine passing by natural passage in a full stream.

The perineal operation may appear to be perfect and the real obstruction be intravesical, requiring a suprapubic operation as in the following case:

S. D. C., Nov. 16, 1899. Sent by Dr. E. C. Buell; age 69. Occupation, mercantile agent; diagnosis, prostatism; history, attack of retention 1895. For four or five years previously, increased frequency and difficulty in passing urine. Between 1895 and the present time he has had a number of attacks of retention with symptoms of uremia and was once confined to bed for six months. Has led continuous catheter life for about a year.

Examination—External organs healthy. Prostate greatly enlarged, the right side more than the left. The growths appear to be adenoid. Seminal vesicles healthy. Bladder capacity 300 cc. Residual urine 180 cc.

January 4, 1899. Being very weak and unwilling to be cut, the patient submitted to a Bottini operation under local anesthesia, 60 cc. of a 5 per cent Nervanin solution for the bladder and a few drops 10 per cent cocaine solution for posterior urethra. One posterior incision 3½ cm. Time 3 minutes; current 50 amperes; very slight hemorrhage; recovery without incident. On January 30, able to pass 4 ounces of urine with each effort. March 22d, passing urine easily at intervals of two or three hours. Uses catheter once at night relieving himself of 4 ounces.

He continued in this condition until June, 1902, and became strong, able to work and enjoy himself. Then there being increasing difficulty in the passage of the catheter and an increased residual, he consented to a perineal prostatectomy. This was done with some difficulty, the growth being very dense and difficult to excochleate. The portions that were easiest to remove were those about the scar of the Bottini burn. The bladder had a very deep bas-fond back of the urethral pillars. Weight of prostatic tissue removed 6 grammes. Calculus removed at same time weighed 4 grammes. This operation was done by Murphy's method. It left a very hard scar,

which, by its contraction, obstructed the urethra and was very painful. At the time of operation my finger entered the bladder, and was swept well around the lower part of its neck, and could not detect any further obstruction, with the exception of a very small teat to the left and below the urethral orifice. It was not believed that this would lead to any difficulty, and it was let alone. The operation did not give the patient any relief. In September he was really worse off than he had been in June. I succeeded in cystoscoping him, and found there were two obstructive elements. One was the contraction of the perineal scar, and the other a moderate sized tumor, springing from the upper right hand segment of the vesical neck, very irregular and connected with the prostate. A perineal incision was made and the hardened cicatrix removed where it pressed upon the urethra. The bladder was opened suprapubically and the prostatic growth removed with great difficulty by rongeurs. Recovery was uneventful. Perineal wound healed in ten days. The healing of the suprapubic wound was delayed by reason of the violence done to the tissues by using the rongeur. He was passing water naturally, and his wounds were closed at the end of three weeks. He empties his bladder completely, has not to rise more than once at night; has become strong and vigorous and is able to attend to his business continuously.

(4) There is also danger of tearing into the rectum, an accident which happened to me once in a cancerous prostate, and which is liable to happen to any one operating in a very dense or fibroid prostate.

Through the perineal wound small, or even large, pieces of the prostatic tissue may escape into the bladder in the process of enucleation. This, to a certain extent, may be overcome with the large nodules by catching each one with a well curved tenaculum and drawing it down into the external wound before it is finally loosened from the capsule, but the very small ones are liable to get lost, and if allowed to remain in the bladder would form nuclei for stones. On three occasions I have had such pieces escape into the bladder, but I have always been fortunate enough to know it and to recover them without making the suprapubic cut. Much time was lost, and the operation was greatly prolonged by reason of this accident.

June 29, 1899. J. B., 70 years, merchant; complains of burning in the bladder and increased urinary frequency. Urine very acid. No albumen, sugar, pus or casts. External genital organs normal. Prostate slightly enlarged on right side. No residual urine.

July 26th. After massage of prostate, urine passed was centrifuged and examined microscopically. Uric acid sand, and oxalate of calcium crystals, surrounded by clumps of pus.

August 5th. Has taken cold and prostate is edemmatous and prominent. This attack was accompanied by right-sided epididymo orchitis. Later he became very comfortable and remained so until 1902, when, in May, after seeing a relative operated for prostatic obstruction by me, he bethought himself of his former attack and had a surgeon in a neighboring city examine him. He found he was carrying more than a pint of residual urine. The surgeon gave him a catheter to use, with which he very promptly infected himself. His prostate had grown to a very large size. After suffering a few weeks he decided on operation. The enlarged glands were enucleated without difficulty, but one piece slipped away and got into the bladder. It required a long time to recover it. His external wound healed in ten days. The urine passed by the urethra naturally when he was lying in bed after twelve days, but he could not retain it when walking about for nearly six weeks. This was due to the undue stretching of the bladder neck by the tumor having grown into it directly from both sides of the urethra, which interfered very greatly with the restoration of its tonicity. Within three months he retained his urine perfectly and his bladder empties itself to the last drop. He sleeps all night and only urinates four or five times during the twenty-four hours.

This case illustrates very nicely commencing prostatic obstruction, its development and cure.

(5) When the tissues of the bladder have been greatly bruised by sharp stones before the operation, or where the urine is hopelessly alkaline, with all that condition implies, all wounded surfaces within the bladder and sometimes within the prostate become covered with phosphatic incrustations. These are subsequently cast off, or may have to be loosened by curettage somewhere between the third week and the third month. In one case I had to reopen the suprapubic wound on this account and took out a whole handful of sloughs covered with such deposits. In another case, very recently, such sloughs came away through the perineal wound which reopened apparently from this cause, and subsequently closed itself. Another case in the hands of a colleague, I am informed, discharged such sloughs for many weeks.

(6) Dangerous hemorrhage is not common by the perineal route, unless the case is complicated by a tight stricture in the perineal urethra requiring the severing of the bulb in the course of the operation or unless the bulb is carelessly cut in making the necessary opening in the urethra; but secondary hemorrhage does occur. I have seen it now in two cases during the past year, each followed an attack of tenesmus, that as near as I could discover arose from an organized clot which had formed on one side of the bladder neck, and after the packing was removed, and the perineal wound practically closed upon the restoration of the power of urination, this clot was swept into the urethra, and, being firmly attached, remained there, caused tenesmus. The forcible contraction of the bladder neck upon the clot loosened it from its vessel and a hemorrhage then took place into the bladder, filling it to distension in less than two hours.

In the first case I was able to remove these clots and stop the hemorrhage by breaking them up with a lithotrite in a 15 per cent solution of hydrogen dioxide in normal salt solution and subsequently pumping them out with a Chismore evacuator. In the second case the bleeding could not be controlled, and I had to do a suprapubic cystotomy under the most unfavorable conditions,

and pack the urethra from within and without the bladder with gauze, steeped in solution of adrenalin chloride. This packing had to be so tightly placed that it was followed by a slight slough in the rectal wall which has been very difficult to repair.

(7) There is another danger which I have discovered in these perineal operations where one or more small nodules are imbedded directly in the tissues around the internal urethral mouth, or where there are nodules buried beneath the mucous membrane directly inside the urethral neck, and their removal is absolutely necessary, it may be followed by the tearing out the whole posterior urethra.

This is a very disagreeable accident, but its occurrence is not necessarily destructive of the ability of the bladder to functionate properly.

April 3d, 1898.--Patient of Dr. Cannon: W. S., 69 years old. Has led a painful continuous catheter life for four years, which for a few months past has been almost unbearable. Prostate greatly enlarged. Bladder base tense. Sounded for stone, result negative. Cystoscoped and three large calculi found in a diverticulum. Left ureter dilated and pumping purulent urine. April 5, litholopaxy. Weight of stones 45 grammes. Confined to bed for twenty-four hours. In a week he was able to pass some urine and catherterize himself at reasonable intervals without pain.

February 12, 1902. Removed prostate by median perineal route at his request. There has been great pain recently and catheterization is no longer possible. The lateral enlargement came away quite easily, but set about the bladder neck just under the mucous membrane, were a lot of small nodules like pearls in a ring. After much patience I succeeded in removing five or six of these. There were two of considerable size beneath the tissues of the bladder in front of each ureteral opening. Suppuration had taken place in these and I opened them through the floor of the bladder with my long capsule knife and enucleated them, but they were very adherent, and using too great traction upon one with a volcellum I turned the bladder neck inside out, removing it with the tumors surrounding it and part of the sphincter muscle attached before I recognized it. To say I was astounded and dismayed would not express my feelings. I placed a No. 40 F soft rubber drainage tube in the opening and as the wound closed reduced the calibre until a No. 16 F was used. The perineal wound was kept open until the bladder made reservoir for 240 cc. of urine while the patient was prone. He leaked a while after getting out of bed, but in seven weeks he was urinating clear urine 250 cc. at a time, and had full control of his bladder at all times and a full sized sound could be passed to his bladder.

At the time of the operation I removed about sixteen stones and the left ureter was so dilated that I could easily introduce the end of my index finger into it.

I have seen him this very day and he is well, and states he has no difficulty in holding his urine for four hours, does not have to rise at night, and can project the stream fully three feet from his body.

(8) In making the perineal incision in very large stout men with deep, strong perineums, great care should be exercised to keep well away from the rectum with the skin cut. I was very much embarrassed once, where I had closely approached the sphincters, but had not severed them at all, to subsequently see the anterior fold of the anus drawn an inch and a half well up into the perineal wound by the action of the levator ani muscles, and every time there was a passage from the bowels the wound became filled with fecal matter, though there was no cut in the rectum itself.

BENEFITS OF THE OPERATION.

It has been a striking fact that sexual power if present, usually remained after operation, and if absent has been often restored. This is directly contrary to the teaching of the Necker school. but has also been the experience of Bryson and Goodfellow.

In the great majority of the 49 prostatectomies and 29 Bottini operations which have been performed by me the results have been ultimately good. In a few they have been almost perfect. None have been positive failures. In all, the general conditions of the individual have been improved. All of my operations have been done on persons who had been leading a catheter life at the time of the operation. It seems to me unreasonable when one considers the general and local conditions existing in such people that the surgeon should be expected to make them over again. A few have dribbled for a time, but not any permanently. All eventually came to hold a reasonable amount of urine, and I do not know of any who ultimately had a residual of more than 50 cubic centimeters. I have never yet seen one of these cases put in a condition where it was not necessary to urinate at least four or five times during the twenty-four hours, and I do not look for this. I think that when one takes an old man who cannot urinate at all, whose urine is foul, whose bladder is distorted, its walls thickened and undergoing fatty degeneration and perhaps contains one or more sharp irritating stones, whose ureters are dilated and whose kidneys are filled with pus, who is weak and sallow and uremic, and who cannot sleep because he has to pass a catheter every fifteen to twenty minutes and this catheter is inserted with great muscular effort, causing much pain and frequently bleeding, obtaining only a few teaspoonfuls or tablespoonfuls of urine at each urination, and one operates him, clearing the membranous and prostatic urethra and the bladder neck from the tumors pressing upon them, giving a chance for the urine to find its way out of the bladder in a natural manner, and afterward that man can hold from 120 to 150 cc. of urine at a time and expel it at intervals or three hours or two hours, and has not to exceed 30 to 45 cubic centimeters of residual urine; if his dyspeptic symptoms disappear, his appetite returns, his cheeks take on the color of life, his eyes become bright again, his mental faculties become lucid and his kidneys secrete a

fair amount of urea, I think a very excellent surgical operation has been performed, the results of which are sufficiently gratifying to justify the risks of failure which were taken in attempting it—results which do not require apology to the patient, his friends or the medical profession by the operator.

This, gentlemen, is the history of 65 of my cases that have received the above benefit from the operation of prostatectomy or prostatotomy. Of the operation of prostatotomy by the Bottini method, I have not the time to tell you what I believe to be its full value, I only repeat what I have already intimated to you several times in this paper, that it possesses a very real surgical value. There are certain cases of prostatic obstruction in which it is to be preferred and will give better results than any cutting operation. In any case where the sufferer keenly dreads the knife, as so many millions of our fellow-men do, he should, if he will accept the responsibility, always be given the benefit of the Bottini operation, where he will not submit to a prostatectomy. The surgeon who pretends to special skill in diseased conditions at the bladder outlet shows no wisdom by sneering at this operation and refusing to acquire skill in its application. I know on this ground I am supported by the two genito-urinary surgeons who, I think, have at their disposal and directly under their control a greater amount of genito-urinary material than any others in America, I mean Drs. Orville Horwitz, of the Jefferson Medical College, and Hugh M. Young, of the Johns Hopkins University, both of whom are practical men with excellent faculties for observation.

REPORTS OF MEDICAL SOCIETY MEETINGS.

HUMBOLDT COUNTY.

The regular meeting of the Humboldt County Medical Society was held at Eureka on Tuesday evening, June 9. The president, Dr. R. Felt, presided and there was a good attendance both from Eureka and outside towns. A constitution and by-laws, approved by the Secretary of the State Society, was adopted, and the following new members elected: Drs. S. McL. Doherty of Fortuna, F. O. Pryor of Scotia and G. N. Wood of Blue Lake.

Considerable time was devoted to the discussion of business matters pertaining to the practice of medicine in the county. The question of fees was discussed and a committee, consisting of Drs. McLaren, Gross and Chas. Falk of Eureka; McKinnon of Arcata; Doherty of Fortuna, and Ross of Ferndale, was appointed to draft a fee bill which, while not binding on the members would serve as a guide to the profession throughout the county.

Dr. C. O. Falk reported a case of hydatiform mole with following history: Patient called at his office April 30th complaining of having had irregular hemorrhages from uterus for some weeks; family history negative; previous health good; had three healthy children, youngest two and a half years old; no miscarriages; menstruation regular until January of this year; missed January and February, and concluded she was pregnant; March 10th she began to flow slightly and continued to do so almost steadily until April 30th. She was very anemic. Examination revealed an enlarged uterus reaching nearly to umbilicus; smooth and freely movable cervix, soft, os patulous. She was ordered to bed and given calomel in divided doses till bowels moved, followed by saline. May 1st condition unchanged; May 2d found patient had been flowing more freely during the forenoon and it was decided to dilate cervix sufficiently to allow digital exploration of uterus, which revealed a grape-like mass in uterus. A part of this was pinched off with placental forceps for examination. The part removed was made up of little cysts about the size and color of gooseberries. The vagina was thoroughly tamponed and patient was sent to hospital where, on May 3d, the uterus was emptied with finger and curette. The mass removed was made up of little cysts similar to sample first removed. There was little hemorrhage and recovery was uneventful. June 6th the patient presented herself at doctor's office feeling perfectly well. Examination showed uterus normal in size. Specimen removed from uterus was exhibited to the society.

Paper was read by Dr. Felt, on amenorrhea, stating that while amenorrhea was a symptom only, it was of such frequent occurrence that it had come to be considered almost as a disease itself. Its pathology was the pathology of the underlying condition or cause. Amongst its many causes were shock, pregnancy, exposure to cold, lack of exercise, closure of cervical canal or vagina, imperfect hymen, atrophy and degeneration of ovaries, rudimentary development of uterus and ovaries. In diagnosing amenorrhea, it must be distinguished from retention of menses due to atresia of cervical canal, imperfect hymen, etc., where menstruation occurred, but no flow was seen. Prognosis depended upon whether or not the cause could be removed. In amenorrhea due to absence or non-development of ovaries or uterus prognosis was, of course, bad. Where it was due to imperfect hymen or closure of cervical canal, removal of these conditions would generally cure the amenorrhea. As to treatment, if due to any diseased condition of system, treat the diseases. Stenosis of uterus canal could be treated surgically or with electricity. The most obstinate or troublesome cases were those with undeveloped ovaries or uterus, but in these cases much could be accomplished by general hygienic treatment, hot baths and douches, and electricity locally applied.

Discussed by Drs. Wallace, C. O. Falk, Perrott, Drysdale, McLaren, Gross and McKinnon.

G. N. D.

ORANGE COUNTY.

The Orange County Medical Association held its regular monthly meeting at the residence of Dr. Wm. Freeman, Fullerton, Tuesday, June 9, with a good attendance. The paper of the evening was read by Dr. Pottenger, of Los Angeles, subject, "Tuberculosis."

H. S. GORDON,
Secretary.